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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/700,171	11/13/2000	Hirokazu Iguchi	001478	2138

23850 7590 11/26/2002

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EXAMINER

LEE, RIP A

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 11/26/2002

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action

Application No.

09/700,171

Applicant(s)

IGUCHI ET AL.

Examiner

Rip A. Lee

Art Unit

1713

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 30 October 2002 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☒ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
- (b) ☐ they raise the issue of new matter (see Note below);
- (c) ☒ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____

3. ☐ Applicant's reply has overcome the following rejection(s): _____.
4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☐ The a) ☐ affidavit, b) ☐ exhibit, or c) ☐ request for reconsideration has been considered but does NOT place the application in condition for allowance because: _____.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☒ will not be entered or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

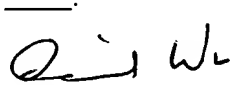
Claim(s) allowed: _____

Claim(s) objected to: _____

Claim(s) rejected: 1-8

Claim(s) withdrawn from consideration: _____

8. ☐ The proposed drawing correction filed on _____ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____.
10. ☒ Other: attachment to advisory action


DAVID W. WU
SUPERVISOR/SENIOR PATENT EXAMINER
TECHNOLOGY CENTER 1700

Attachment to Advisory Action

A Rule 132 delaration was not submitted with the response filed on October 30, 2002. The Applicants have kindly sent a facsimile copy on November 21, 2002. This copy will be entered into the record.

1. The Applicants traverse the rejection of claims 1 and 2 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 3,996,173 to Heichele *et al.* in view of U.S. Patent No. 5,693,699 to Bertelo *et al.*

The Applicants maintain that the parent claim was amended to exclude graft copolymers derived from diene-containing backbone polymers. This is not true. Present claim 1 states that the crosslinked elastomeric polymer is composed of 79.9-99.99 wt % C₂-C₈ alkyl acrylate, 0.01 to 5 wt % polyfunctional monomer, and 0-20 wt % other monomers. As can be seen, there is no such exclusory language in the claim.

This point notwithstanding, the prior art recites an elastomeric polymer comprised of C₂-C₁₂ alkyl acrylate, 0.5-30 wt % of conjugated diene, and 0.02-10 wt % of crosslinking monomer containing two vinyl moieties. The latter two components qualify as "polyfunctional monomer," as recited in the present claim. Use of 0.5 wt % of conjugated diene and 0.02 wt % of crosslinking monomer would satisfy the limitation of the present claim. Since no other monomer is used, the prior art polymer also meets the limitation of 0 wt % of "other monomers."

In view of this and previous discussions, the rejection has not been withdrawn.

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2. The Applicants traverse the rejection of claims 1-8 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 3,996,173 to Heichle *et al.* in view of U.S. Patent No. 4,670,509 to Aoyama *et al.*

The Applicants maintain the position that the limitation of Aoyama *et al.*, in which the specific viscosity η_{sp} of the graft copolymer is at least 0.6, equates to a reduced viscosity η_{sp}/c of at least 6. Therefore, the reduced viscosity of the prior art material lies outside the claimed 1-5 range. The Applicant's calculation, $0.6/0.1 = 6$, is based on the notion that viscosity and concentration are related linearly, and clearly, this is not the case. The example provided in the declaration has been considered, but it is not convincing because it is not representative of the graft polymer of Aoyama *et al.* Different polymers can be expected to possess different physical properties.

The Applicants submit that even if the copolymer of Aoyama *et al.* is used in the composition of Heichele *et al.*, the thus-modified composition is still different from the presently claimed composition. A *vis-à-vis* comparison of claims is instructive. The contents of the overall compositions of the claimed invention and of the prior art is shown below, and they appear to be substantially identical.

Present claims

100 parts PVC resin

1-10 parts graft copolymer

10-30 parts CaCO_3 Heichele *et al.* [modified]

80-98 wt % PVC resin

[2-20 wt % graft copolymer of Aoyama *et al.*]2-30 wt % CaCO_3

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The graft copolymer of the present invention has the following constitution:

25-75 parts graft monomer component	{ <ul style="list-style-type: none"> 40-100 wt % MMA 0-60 wt % C₁-C₈ alkyl acrylate, C₂-C₆ alkyl methacrylate, unsaturated nitrile, or aromatic vinyl compound
25-75 parts crosslinked elastomeric polymer	{ <ul style="list-style-type: none"> 79.9-99.99 wt % C₂-C₈ alkyl acrylate 0.01-5 wt % polyfunctional monomer ✱ 0-20 wt % other monomers

The graft copolymer of Aoyama *et al.* is comprised of the following components:

15-50 parts graft monomer component	{ <ul style="list-style-type: none"> 30-100 wt % MMA 0-70 wt % C₁-C₈ alkyl acrylate, C₂-C₆ alkyl methacrylate, unsaturated nitrile, or aromatic vinyl compound
50-80 parts main chain	{ <ul style="list-style-type: none"> 80-100 wt % C₂-C₈ alkyl acrylate 0.01-5 wt % crosslinking agent ✱ 0-20 wt % other monomers

Note that, in terms of the claims, polyfunctional monomer and crosslinking agent are synonymous. Also, both materials may contain 0 wt % of "other monomers." The actual identities of crosslinking agent and "other monomers" differentiate the two inventions, however, there is no distinctive difference between the prior art material and the *claimed* material.

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The Applicants' notion that motivation to combine references was lacking has been discussed previously. Heichele *et al.* uses a MBS resin as an impact modifying resin, and this is what is conventionally used in the art for PVC resins. Aoyama *et al.*, however, show that use of their graft copolymer as the PVC modifier results in compositions that are superior in impact resistance and weather resistance. An added benefit of using their graft copolymers is lack of die swelling problems in extrusion (see discussion, Paper No. 7). Therefore, it is maintained that one having skill in the art would have found it obvious to use the graft copolymer of Aoyama *et al.* in place of MBS resin in order to capitalize on these improved properties. In sum, ample motivation exists to combine references.

In view of this and previous discussions, the rejection has not been withdrawn.

3. In conclusion, the proposed amendments will not be entered because they fail to place the claims in proper condition for allowance. The examiner notes that the amendment includes the recitation "when they are used" in reference to organosiloxanes and single vinyl group monomers. If they are, indeed, used, then the parent claim should be amended to reflect this fact.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (703)306-0094. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (703)308-2450. The fax phone number for the organization where this application or proceeding is assigned is (703)746-7064. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

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November 21, 2002